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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/495,250	01/31/2000	Jin Soo Lee	CIT/K-108	4616

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EXAMINER

WOO, ISAAC M

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 04/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/495,250

Applicant(s)

LEE ET AL.

Examiner

Isaac M Woo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-4, 7-8, 11 and 13-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Delp (U.S. Patent No. 6,081,276).

With respect to claim 1, Delp discloses the method of searching multimedia data (image, col. 2, lines 6-17 and col. 4, lines 63-65) comprising:

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a1) receiving at least one reference multimedia data (image) selected by a user, wherein the reference multimedia data represents a specified multimedia data to be searched (FIG. 2 and col. 3, lines 45-53); and

b1) searching for the specified multimedia data utilizing feature (image by color name) and feature elements (each image region) of the respective features included in the at least one reference multimedia data, by considering a degree of affect (FIG. 4, FIG. 5) each feature and each feature elements should have in the search, see (col. 4, lines 28-46 Note: each image region (element) defined by affects (e.g., count, fractional count and 6 limits)).

With respect to claims 2 and 7, Delp discloses the searching for the specified multimedia data utilizing a combination of features and features elements of the respective features included in the at least one reference multimedia data, wherein each feature has a feature weight and each feature element has a feature element weight, see (col. 4, lines 28-46 Note: each image region (element) defined by weight (e. g., fractional count and 6 limits)).

With respect to claim 3, Delp discloses wherein a1) a plurality of reference multimedia data are selected by the user, an wherein b1) comprises:

a2) measuring the similarities of features (color name count, FIG. 4) included in the plurality of reference multimedia data, see (FIG. 4 and col. 4, lines 18-26);

b2) determining weights of each feature (fractional count, i.e., fractional count 1 has same similarity color name) according to the measured similarities of the features, see (FIG. 4 and col. 4, lines 18-26);

c2) measuring the similarities of features elements (color name region) in each feature (FIG. 5) included in the plurality of reference multimedia data, see (FIG. 4 and col. 4, lines 18-26);

d2) determining weights of each feature elements in respective features according to the measured similarities of the feature elements, see (FIG. 5 and col. 4, lines 28-46, Note: values of the fractional count and 6 limits are weights); and

e2) searching for the specified multimedia data utilizing features and feature elements included in the plurality of reference multimedia data, in consideration of the updated features weights and feature element weight, see (col. 2, lines 20-26 and col. 4, lines 63-65).

With respect to claims 4 and 8, Delp discloses that terminating the search if the user is satisfied with the result of the search, otherwise the method comprising:

f1) receiving at least one other reference multimedia data selected from among the resultant images of the search, wherein the at least one other reference multimedia data is determined to be similar to the specified multimedia data, see (602, FIG. 6A and col. 5, lines 1-2);

g1) measuring the similarities of features included in the plurality of reference multimedia data and the at least one other reference multimedia data, see (FIG. 4 and col. 4, lines 18-26);

h1) determining and updating weight of each feature according to the measured similarities of the features, see (FIG. 4 and col. 4, lines 18-26);

i1) measuring the similarities of the feature elements in each feature included in the plurality of reference multimedia data and the at least one other reference multimedia data, see (FIG. 4 and col. 4, lines 18-26);

j1) determining and updating weights of each feature elements in respective features according to the measured similarities of the feature elements, see (FIG. 5 and col. 4, lines 28-46, Note: values of the fractional count and 6 limits are weights); and

k1) re-searching for the specified multimedia data utilizing feature elements included in the plurality of reference multimedia data and in the at least one other reference multimedia data, in consideration of the updated features weights in h1) and features elements weight in j1), see (col. 2, lines 20-26 and col. 4, lines 63-65).

With respect to claim 11, Delp discloses that the feature is color and the feature element weights are determined either by a color histogram with n color elements (FIG.4), or by dividing a multimedia data into $n*m$ grid regions and utilizing a regional color histogram or a color representing a grid region as the feature elements, see (col. 4, lines 18-27 and col. 4, lines 27-46).

With respect to claim 13, Delp discloses the data structure comprising:
feature information including feature (image color) and feature elements (image region) of an image, see (image, image region, FIG. 2; FIG. 3; col. 3, lines 45-53; col. 4, lines 63-65 and col. 2, lines 28-32); and
weight information including weight information (FIG. 4; FIG. 5, col. 4, lines 27-46) of the features and weight (count and fractional count) information of the feature element, see (FIG. 4; col. 4, lines 18-27 and col. 2, lines 28-32).

With respect to claim 14, Delp discloses that the feature and the feature elements are represented by an image characteristic structure, comprising:
global information which represents a feature of a whole image, see (full region, FIG.3 and col. 3, lines 45-53); and
spatial information which represents a feature of an image region, see (FIG. 3; col. 2, lines 28-32; col. 5, lines 3-9 and col. 3, lines 54-59).

With respect to claim 15, Delp discloses that the image characteristic structure further comprises a weight information which represents the importance of the global information and the spatial information, see (FIG. 4; FIG. 5 and col. 4, lines 18-46).

With respect to claims 16-17, Delp discloses that the global information includes global feature descriptors of the whole image (full region, color name;

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FIG. 3; FIG. 5, col. 3, lines 54-59) and element weight descriptors, and wherein the spatial information includes spatial feature descriptors of image regions and position weight descriptors for respective image region, see (FIG. 4 and col. 4, lines 18-27).

With respect to claim 18, Delp discloses that the feature and feature elements are represented by an image characteristic structure, comprising:

global information, see (full region, FIG. 3, col. 3, lines 54-59);

local information, see (left, bottom center FIG. 3, col. 3, lines 54-59; FIG. 4, and col. 4, lines 18-27);

local position information, see (FIG.3 and col. 5, lines 3-9 and col. 3, lines 59-62).

With respect to claim 19, Delp discloses that the features are color (color name, FIG. 2; FIG. 4; col. 2, lines 20-27 col. 4, lines 63-65) and texture (210, color name dictionary, FIG. 5 and col. 4, lines 28-46) and the global information includes a global color feature unit and a global texture feature unit; the local information includes a local color feature unit, a local texture feature and a local color and texture feature unit (region name and color name FIG. 4, col. 4, lines 18-27); and the local position information (pixel and x-l, y-l, FIG.3) includes a local position color feature unit and a local position texture feature unit, see (col. 5, lines 3-9 and col. 3, lines 54-62).

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With respect claim 20, Delp discloses that the global color feature unit is represented by a global color histogram, the global texture feature unit is represented by a global texture histogram (FIG. 4 and col. 4, lines 18-27), the local color feature unit and the local position color feature unit are represented by a color image grid, (FIG. 3, col. 3, lines 54-69), the local texture feature unit and the local position texture feature unit (col. 5, lines 3-9) are represented by a texture image grid a local color and texture feature unit is represented by both the color image grid and texture image grid, see (col. 3, lines 54-67 to col. 4, lines 1-9).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5-6, 9-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delp (U.S. Patent No. 6,081,276).

With respect to claims 5-6 and 9-10, although Delp does not explicitly discloses the receiving, measuring, determining dissimilarities of multimedia

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features and feature elements, shows that disclosed system is for searching and measuring the multimedia data to get accurate color name based upon images' similarities (FIG. 4). When disclosed system fails to find similarity that means the image has low values of fractional count (FIG. 4, i.e., green is 0.04) and that means image has dissimilarity. Thus, given teaching of Delp, a person having ordinary skill in the art would have readily recognized the measuring and determining dissimilarities, in reverse way of measuring similarities (i.e., if fractional count is 0.04, then it has very low similarities and has big dissimilarities). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention to measure and determine dissimilarities based upon similarity method by the system of Delp. Because the fractional count shows the determination of the similarity or the dissimilarity.

With respect to claim 12, although Delp does not explicitly disclose that the feature element with a, Delp implies from the statement that "the percentage occurrence of each of the color name" (FIG. 4, col. 4, lines 24-26) and "a table of the boundary definitions of each color name" (FIG. 5, col. 4, lines 27-29). Thus, given teaching of Delp, a person having ordinary skill in the art would have readily recognized the specified threshold values (boundary) are utilized. Because when the fraction count is greater than certain boundary value, the color name becomes different color name. Thus, it would have been obvious to use feature element weight which is greater than specified values.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Abdel-Mottaleb et al (U.S. Patent No. 6,285,995) discloses the system for image retrieval in a database with a large number of images.

Abdel-Mottaleb et al (U.S. Patent No. 6,163,622) discloses the system for image searching to find one or more images meeting the specification of the user.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isaac M Woo whose telephone number is (703) 305-0081. The examiner can normally be reached on 8:00-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y Vu can be reached on (703) 305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7201 for regular communications and (703) 308-6606 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

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IMW

April 12, 2002



JEAN M. CORRIELUS
PRIMARY EXAMINER